

## REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

### **I. Introduction**

Non-elected claims 50-66 are requested to be cancelled without prejudice or disclaimer. Claims 1, 13, 24 and 37 are currently being amended. Claim 67 is being added. After amending the claims as set forth above, claims 1-49 and 67 are now pending in this application. Support for the amendment to claims 1 and 24 may be found on page 6, first full paragraph of the specification. Support for the amendment to claims 1 and 24 and for new claim 67 may be found in the last paragraph on page 12 and the first paragraph on page 13 of the specification. No new matter was added.

### **II. Rejoinder Requested**

Non-elected claims 5-12 and 16-49 are withdrawn from consideration. Applicants respectfully request that dependent claims 5-12 and 16-23 be rejoined with independent claims 1 and 13, respectively, upon allowance of claims 1 and 13. Applicants have amended method claims 24 and 37 such that they now have the same or narrower scope as claims 1 and 13, respectively. Applicants respectfully request that claims 24-36 and 37-49 be rejoined with independent claims 1 and 13, respectively, upon allowance of claims 1 and 13, under the rejoinder procedure described in MPEP § 821.04.

### **III. The Rejections Should Be Withdrawn**

Claims 1-3 and 13-14 are rejected under §102(b) as being anticipated by Hantschel. Claims 4 and 15 are rejected under §103(a) as being obvious over Hantschel in view of Lu '428. These rejections are respectfully traversed.

**A. Claim 1**

Claim 1 has been amended to recite that the nanowhisker contains a heterojunction. In contrast, neither Hantschel nor Lu teach or suggest a nanowhisker containing a heterojunction. Thus, claim 1 is not anticipated by Hantschel and claim 1 is not obvious over Hantschel and Lu. Claims 2-12 and 67 are believed to be in condition for allowance at least for the same reason as claim 1.

**B. Claim 13**

Claim 13 has been amended to recite that the nanowhisker containing a catalyst particle is grown on a free end of the tip member. In contrast, neither Hantschel nor Lu teach or suggest a nanowhisker with a catalyst particle.

As shown in Figures 1b and 1c of the present application and as described on pages 12-13 of the present application, the nanowhisker is preferably formed by the following method. A catalyst metal volume 10 is formed on the tip member 4 of the beam 2. The catalyst metal volume 10 is heated to coalesce it into a catalyst particle 12. The nanowhisker 16 is then formed on the tip member 4 below the catalyst particle 12. Thus, the catalyst particle 12 is used to catalyze the formation of the nanowhisker 16 at the desired location on the tip member 4 of the beam 2.

In contrast, neither Hantschel nor Lu require a catalyst particle to form their respective structures. Hantschel teaches to form a layer of material 9 or 10 inside tapered grooves 18 or 21 in a substrate 7. The substrate 7 is then selectively etched to leave tips 4 or 5 protruding from the exposed portion of layer 9 or 10, respectively, as shown in Figures 5 and 6, respectively, of Hantschel. Figure 8 of Hantschel shows an alternative method of forming tips 28 by etching a material 24/25. Thus, Hantschel forms tips 4, 5 and 28 by etching a layer of material, but does not grow nanowhiskers on a substrate.

Furthermore, in contrast to the assertion in the Office Action, Hantschel does not teach or suggest forming carbon nanotubes. Hantschel merely teaches to form diamond tips 4, 5, which are not the same as carbon nanotubes.

Thus, Hantschel does not use a catalyst particle because a catalyst particle is not necessary to form the tips of Hantschel by etching.

Likewise, Lu does not teach or suggest using a catalyst particle. Lu teaches to selectively grow ZnO nanotips on small exposed portions of a silicon or other template islands exposed in an R-plane alumina material (see Figure 1 of Lu). As noted in paragraph [0024] of Lu, the ZnO nanotips selectively grow on silicon and other template islands without the use of a metal catalyst particle.

Thus, neither Hantschel nor Lu teach or suggest forming nanowhiskers containing catalyst particles. Applicants respectfully request that the rejections be withdrawn.

#### **IV. Conclusion**

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 11/20/06

By 

FOLEY & LARDNER LLP  
Customer Number: 22428  
Telephone: (202) 945-6090  
Facsimile: (202) 672-5399

Leon Radomsky  
Attorney for Applicant  
Registration No. 43,445